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ABSTRACT

The development of a common instructional language used by teachers and administrators to describe their beliefs about student learning and to coach other teachers can be an important factor in the adoption of instructional change. This investigation of the relationship of language, belief, and practice is the culmination of a historical analysis of the school reforms of mastery learning and outcomes-driven education in the Johnson City Central School District, New York. The paper reviews conceptual models of individual behavior and change within organizations, the characteristics of social learning, and the relationship between thought and language. It argues that an instructional language based upon educational research and a commonly shared mission and rooted in the local culture will increase teacher efficacy for both the coaching teacher and the teacher being coached. A common language will also increase the efficiency of communication within the organization. Thus, the tolerance for interdependence between different levels in the system will increase, which will enhance system-wide adoption of instructional change. (Author/AMH)

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MASTERY LEARNING:

TEACHER BELIEF, LANGUAGE, AND PRACTICE

by

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Abstract

The development of a common instructional language used by teachers and administrators to describe their beliefs about student learning and to coach other teachers can be an important factor in the adoption of instructional change. This investigation of the relationship of language, belief, and practice is the culmination of an historical analysis of the school reforms of mastery learning and outcomes driven education in the Johnson City Central School District, New York. The article briefly reviews conceptual models on individual behavior and change within organizations, the characteristics of social learning, and the relationship of thought and language. It argues that an instructional language which is based upon educational research and upon a commonly shared mission and is rooted in the local culture will increase teacher efficacy for both the coaching teacher as well as the teacher who is being coached. A common language will also increase the efficiency of communication within the organization and thus, the tolerance for interdependence between different levels in the system and ultimately, will enhance systemwide adoption of instructional change.

MASTERY LEARNING: TEACHER BELIEF, LANGUAGE, AND PRACTICE

> When I read the article by Benjamin Bloom, whose major thesis is that under the right conditions, most kids can learn. Then education began to make a lot of sense to me. Whatever I say about the kids, I will say about everybody in the district. Under the right conditions, I am absolutely convinced that 90 to 95% of the teachers will do a super job, but you have to set those conditions. I say the same for principals. And I tell the board, superintendents are human beings, and the same holds for superintendents. (Superintendent, Johnson City Central Schools, 1986)
>
> The ODDM model makes it possible to talk about education itself. (A high school teacher, Johnson City Central Schools, 1987)

These statements refer to the instructional mission and the decision making model which drive the Johnson City schools today. Located in New York state, the district has incorporated mastery learning and outcomes based instruction throughout its entire system, kindergarten through twelfth grade, and reports findings that by the "time students finish the 8th grade, at least 75 percent of the its students are at least six months above grade level," and that "70 percent of its graduates earn the New York Regents diploma compared to a statewide average of less than 50 percent" (Vickery, 1988, p. 52).

The reform of the district which led in 1985 to the development of "ODDM" or Outcomes Driven Developmental Model (see

Figure 1) began in the early 1970s when a newly hired superintendent and a small group of teachers worked together to implement classroom practices based on student mastery. As this group of teachers experienced success in their own classrooms, they were employed by the district to teach other district elementary teachers those practices which had influenced student learning positively. In the development and dissemination of the successful practice, the teachers and superintendent developed a commonly understood and shared language to describe their practice of mastery learning and their beliefs about student learning based upon the research literature of Bloom (1968, 1976, 1981).

This article analyzes the relationship of the belief system of mastery learning, of the common language of mastery learning, and of teacher practice and change within the Johnson City Central School District. To do so, I will explain this relationship in the context of conceptual models on individual behavior and change within organizations, characteristics of social learning, and the relationship of thought and language. I will also cite recent research on teaching and on school improvement that has identified several organizational, psychological, and cognitive factors which influence teacher change. In conclusion, I will argue that a common instructional language developed by teachers as they practice is an important factor in teacher change and school reform. A "homegrown" shared instructional language, rooted in a shared belief and supported by educational research, gave Johnson

OUTCOMES-DRIVEN DEVELOPMENTAL MODEL

MISSION: ALL STUDENTS WILL LEARN WELL

RESEARCH BASE

PSYCHOLOGICAL BASE — **TRANSFORMATIONAL LEADER** — **PHILOSOPHICAL BASE**

ADMINISTRATIVE SUPPORT	COMMUNITY SUPPORT	TEACHER SUPPORT
STAFF DEVELOPMENT	BOARD POLICY SUPPORT	INSTRUCTIONAL PROCESSES
COMMUNICATIONS		CURRICULUM ORGANIZATION
PROBLEM SOLVING	PUBLICS	SCHOOL PRACTICES
CHANGE PROCESS	NETWORKING	CLASSROOM PRACTICES
CLIMATE IMPROVEMENT		ORGANIZATIONAL STRUCTURES
MANAGEMENT		

DESIRED STUDENT EXIT BEHAVIORS

1. SELF-ESTEEM AS LEARNER AND PERSON
2. COGNITIVE LEVELS - LOW TO HIGH
3. SELF-DIRECTED LEARNER
4. CONCERN FOR OTHERS
5. PROCESS SKILLS - PROBLEM SOLVING - COMMUNICATION DECISION MAKING - ACCOUNTABILITY GROUP PROCESS

DR. ALBERT MAMARY 8/87
JOHNSON CITY CENTRAL SCHOOL DISTRICT

Figure 1

City teachers a means to discuss and understand the meaning of belief and practice in the local culture, increased teacher efficacy, enhanced the adoption of the instructional change, and increased the interdependence of the organizational elements of district as exemplified in the tightly coupled ODDM model.

The research for this analysis was drawn from a 25 year historical case study of school reform in the Johnson City Central School District. Research methods included a review of community documents beginning in 1896 and of school documents, both public and private, beginning in 1964; nonparticipant observation of classroom practice, of school meetings and conferences, and of the community; structured and informal interviews of school staff and of community members; and demographic analyses of the community and school from 1960 through 1989.

MODELS AND RESEARCH ON CHANGE

In an analysis of individual behavior and change within an organization, March and Simon (1958) developed an influence model which holds that such change is directed by two related sources. The first is the internal state or the memory content of the individual which includes that person's values, goals, beliefs, perceptions, and expectations as to consequences of his/her actions. The second source consists of cues from the organizational environment to the individual. Environmental cues include information about and from the general cultural climate of

the organization, the norms of the organization, the formal hierarchy of the organization including supervisory practice, the task or job of the individual, officially prescribed work rewards, and his/her associates in the organization. Environmental cues are often intended to influence the internal state of the individual and direct his/her behavior toward the objectives of the organization. This model is helpful in conceptualizing and organizing the several conditions for the comprehensive instructional change which occurred in the Johnson City district.

Investigations by Vickery (1988, 1990), Suarez (1985), Burns (1987), and Desmond (1990) have added considerable knowledge to the understanding of the environmental cues which influenced the adoption of instructional change in Johnson City. This knowledge substantiated the key roles of the superintendent and assistant superintendent in the process of instructional reform and the use of administrative reward structures to foster teacher change; examined historical and social change in the culture of the community; explored community and teachers' union dissension regarding the instructional changes; and established the role of mastery learning in the formulation of the instructional goals, norms, outcomes within the system.

Studies by Olson (1981) and Munby (1983) have argued that a teacher's internal beliefs regarding teaching and practice must be considered by an administrator or an innovator when a significant curricular or organizational change is being implemented. In

Johnson City, the original team of teacher innovators and the superintendent shared their beliefs about student learning and teaching practices and worked to develop a coherent statement on their belief that "all students will learn well." During the first phase of instructional change in the district, other teachers who shared similar beliefs were encouraged to implement mastery learning in their classrooms and were trained to do so by their own peers and not by outside consultants.

Those teachers who did not want to implement the instructional changes in their own classrooms, were advised to "get out of the way" and were often transferred to an elementary school where the innovative practices at the time were not being pursued (Desmond, 1990, p.189). At the same time, the innovators, both teachers and administrators, met frequently to describe those classroom practices which met the goals and philosophy of mastery learning. The importance of this type of direct administrative participation and facilitation in the process of teacher change and in the implementation of school innovation has also been substantiated in the change research by Fullan (1982).

After successful implementation of mastery learning had occurred in three elementary schools, the school board and superintendent decided to close the smaller elementary schools of the district and to merge the elementary faculties into two buildings. Teachers within the system who thus far had been able to resist the implementation of mastery learning were then required

to change and to initiate mastery learning in their own classrooms. They gradually did so with help and pressure from their teaching colleagues and the building administrator. Recent reanalysis of the Rand change agent studies (McLaughlin, 1990) has documented similar successful implementation of innovations where teacher belief or commitment has followed mandated or coerced involvement at both the individual and the system level similar to the change process in Johnson City.

The second five year phase of implementation of mastery learning, 1976-1981, included the secondary level. A group of high school teachers who adhered to the belief system of mastery learning worked to establish successful classroom practices based on mastery learning. These teachers then became the models and coaches for other teachers at the secondary level and were hired by the district to conduct training sessions for other staff. The comprehensive adoption of mastery learning throughout the secondary grades, however, required a longer period of time due to greater teacher resistance to the reforms and to prolonged conflict between the superintendent and the teachers union. Accomplishment of the innovations also required more clearly defined supervisory practices and organizational rewards than at the elementary level.

Johnson City's means of disseminating mastery learning and other instructional changes from classroom to classroom and from school to school via peer modeling, coaching, and training supports Bandura's model of social learning. Bandura (1977) maintains that

an individual's observational learning is strengthened if the individual knows the model's behavior is producing valued outcomes, termed the outcome expectancy. Since the practice was disseminated by teacher to teacher in Johnson City, the observing teacher was able to ascertain whether the practice produced valued outcomes for the model teacher, establishing outcome expectancy. The district's rewards or valued outcomes for the implementation of mastery learning in classroom practice were personal recognition of these teachers by the superintendent, positive evaluations by the building administrators, positive results from parent surveys and standardized tests, and increased opportunities for additional employment and income.

In addition, the opportunity to observe the practice of mastery learning directly in a peer's classroom strengthened the observer's retention of practice and allowed the observer to converse with the model teacher regarding belief and practice at the time, in the training session, or after the observer had tried the practice in his/her own classroom. The observing teacher's efforts to implement the changes also produced the valued outcomes of administrative recognition and positive evaluations. The close proximity of the model teacher's practice to the observer as an easily accessed source of information also helped to enhance the observing teacher's conviction that he/she could successfully execute the behavior required to produce valued outcomes termed the efficacy expectation by Bandura.

Studies of instructional change in schools (Berman & McLauglin, 1977; Dembo & Gibson, 1985; Ashton & Webb, 1986; Guskey, 1988) have also found that a teacher's efficacy expectation is positively related to the percentage of goals achieved, the amount of teacher change, the continuation of innovative methods and materials, and improved student performance. The Johnson City case study further substantiates the positive relationship between these factors and teacher efficacy and provides additional evidence that a teacher's efficacy can be increased through close access to a model's practices and through ongoing shared verbal interaction in a commonly understood instructional language based on a clearly stated belief system or mission.

The instructional change process which occurred in Johnson City encouraged interaction among teachers. The shared language of mastery learning which developed in Johnson City helped to facilitate this communication. As the philosophy and language of mastery learning and the Johnson City applications of mastery learning were disseminated by the model teacher to the observer, the district's own instructional language evolved. In their study of school improvement and the use of peer coaching, Bird and Little found that the "evolution of a professional language" was central to the implementation of selected practices by the teachers in their research project (pp. 17-18).

One way to view the interrelationship of the internal state of the individual in terms of his/her thought processes, values, and

beliefs and his/her language is rooted in the work of L.S. Vygotsky (1962, 1978). The Vygotskian view holds that thinking as an activity is dependent upon speech, and developed and maintained through interpersonal experience (Belmont, 1989).

Vygotsky (1978) believed that the "internalization of culturally produced sign systems (e.g. language, writing, number systems) brought about behavior transformations and formed the bridge between early and later forms of individual development" (pp. 7-24). His research led him to conclude that as soon as speech and the use of language were incorporated into any action, the action became transformed and organized along entirely new lines.

In the adaptation of mastery learning to the classroom practice in Johnson City, the initial group of teachers and superintendent worked together to implement practice and to communicate the techniques of the successful practice of mastery learning. Successful practices which reaped valued outcomes increased the teacher's efficacy and, in turn, reinforced the use of these practices.

When these teachers developed a commonly understood language to describe this belief and these practices to other teachers in training sessions, they sought to influence the behavior of other teachers and their classroom practice. In addition, from a Vygotskian perspective, the model teacher's thought processes were also influenced and transformed. The adage, "to teach is to learn

twice" reflects this view of interrelationship of thinking and language. By teaching another, the model teacher transformed his/her cognitive state regarding the practice and increased his/her own belief in the practice and his/her own personal efficacy. Thus, the mediation of language upon the internal cognitive state of the teacher reinforced the teacher's beliefs regarding student learning and the use of the instructional practice of mastery learning.

Throughout the first decade of instructional reform in Johnson City, efforts were made by the administration and by those teachers to refine the language of mastery learning used in district reports and documents (Desmond, 1990). Beginning in late 1970s and early 1980s, additional instructional practices, e.g., reading in the content areas and reality therapy, were introduced into classroom practice in alignment with the core belief of mastery learning. The district's language system expanded to include those terms or "signs" associated with these practices. These efforts to refine as well as expand their commonly shared language were clearly coded in 1985 in the Outcomes Driven Developmental Model.

As the teachers and administrators developed a way to talk about education, the capacity of the organization to expand and sustain an interdependent pattern of activity increased. March and Simon (1958) describe such a relationship as "the greater the efficiency of communication within the organization, the greater the tolerance for interdependence" (pp. 162-169). By standardizing

their language through the use of common vocabulary to describe practice, Johnson City teachers and administrators increased the efficiency of communication within the organization and provided the means for increased interdependence among the classrooms and schools of the district.

March and Simon also note that the relationship between communication and coordination of units in the organization is interdependent: when self-containment of organizational units decreases, (e.g., the isolation of the self-contained classrooms, departments, grade levels in Johnson City) and the interdependence or coordination of the units increase, the likelihood of developing an efficient communication code increases. March and Simon's model also predicts that once a pattern of communication is established, it will have an important influence on the decision-making processes of the organization. The development of ODDM as the decision making framework for the district is a manifestation of the influence such an interdependent pattern of communication can have.

In conclusion, this analysis of instructional change via mastery learning in Johnson City establishes the important role that a commonly shared and clearly defined language rooted in strong statement of mission can have upon teacher implementation of innovative practice and upon the dissemination of the innovation throughout the school system in the study of change. In research on the development of teacher beliefs and cognitive processes, the

language used by teachers and those who are advocating change is an important indicator of the strength of belief and practice. When a common language exists where members of the organization understand the meaning of its signs within their local culture, the capacity to "talk about education" exists. This capacity enhances the opportunity for teachers to discuss belief and practice and strengthens the adoption of instructional innovations throughout the system. Investigations of "the intentional talk in teachers' lives" (Cochran-Smith & Lytle, 1990, p.2) is a small but growing body of research which examines the relationship of language, belief, and practice. The Johnson City case adds further evidence that "speech unites the cognitive and the social" (National Institute of Education, 1974, p.1) and that a teacher's language is an important factor in the process of translating belief into practice.

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